APPENDIX A

MAINE NATURAL AREAS PROGRAM RARITY RANKING SYSTEM

The Maine Natural Areas Program has developed a statewide ranking system to describe the relative rarity, status, and condition of rare species and exemplary natural communities in the State of Maine. The ranking system includes S-Ranks, G-Ranks, State and Federal listing for threatened and endangered species, and an Element Occurrence Rank.

S-Ranks and G-Ranks

The following "S-ranks" are determined by the Maine Natural Areas Program:

S1 Critically imperiled in Maine because of extreme rarity (five or fewer occurrences or very few remaining individuals or acres) or because some aspect of its biology makes it especially vulnerable to extirpation from the State of Maine.

S2 Imperiled in Maine because of rarity (six to 20 occurrences or few remaining individuals or acres) or because of other factors making it vulnerable to further decline.

S3 Rare in Maine (on the order of 20 to 100 occurrences).

S4 Apparently secure in Maine.

S5 Demonstrably secure in Maine.

SA Accidental in Maine, including species that sporadically breed in Maine.

SE An exotic species established in Maine, may be native elsewhere in North America.

SH Occurred historically in Maine, and could be rediscovered. Not known to have been extirpated.

SU Possibly in peril in Maine, but status uncertain. Need more information.

SX Apparently extirpated in Maine (historically occurring species for which habitat no longer exists in Maine).

S? Probably rare or historic in Maine, based on status elsewhere in New England, but not yet reviewed or documented by the Maine Natural Areas Program.

"G-ranks" indicate global rankings as determined by The Nature Conservancy, and follow the criteria listed above for state ranks. For example, "G1" means that one to five occurrences have found and that the species is critically imperiled throughout its entire range.

Maine Status Listing for Endangered and Threatened Plant Species

These notations reflect the State-listed status according to 5 M.S.R.A. 13076 – 13079, which mandates that the Maine Department of Conservation produce and biennially update an official list of Maine's endangered and threatened plants.

E Endangered species, represented in Maine by one recent (within the last twenty years) documented occurrence, or Federally listed as Endangered.

T Threatened species, represented in Maine by two to four recent documented occurrences, or Federally listed as Threatened.

Certain exceptions to the numerical criteria for these categories are provided for small population sizes, species that are confined to a small geographic area in Maine, or when the taxon is clearly and imminently jeopardized.

Maine Status Listing for Endangered and Threatened Animal Species

These notations reflect State-listed status according to 12 M.S.R.A. 7751-7759, which mandated that the Maine Department of Inland Fisheries and Wildlife produce an official list of Maine's endangered and threatened animals.

E Endangered species. Any species of fish or wildlife that has been determined to be in danger of extinction throughout all or a significant portion of its range.

T Threatened species. Any species of fish or wildlife that is likely to become an Endangered species within the foreseeable future throughout all or a significant portion of its range.

SC Special Concern species. Any species of fish or wildlife that does not meet the criteria for Endangered or Threatened but is particularly vulnerable and could easily become a Threatened, Endangered, or Extirpated species due to restricted distribution, low or declining numbers, specialized habitat needs or limits, or other factors, or which is a species suspected to be Endangered or Threatened, or likely to become so, but for which insufficient data are available.

X Extirpated. Any species of fish or wildlife that was at one time indigenous to Maine but which has not been documented as occurring in Maine for the past 50 years.

Federal Status for Plants and Animals

LE Listed as Endangered at the national level.

LT Listed as Threatened at the national level.

E(S/A) Treated as endangered due to similarity in appearance.

Element Occurrence Rank

The Maine Natural Areas Program also assigns an "element occurrence rank" based on field work by a knowledgeable individual. The "element occurrence ranks" are:

A excellent
B good
C marginal
D poor
X extirpated
H historical
E extant

These "element occurrence ranks" represent a comparative evaluation of several factors, including:

1) Quality. The representativeness of the occurrence, especially when compared to element occurrence specifications and including maturity, size, numbers, etc.

2) Condition. How much the site and the element occurrence itself has been damaged or altered from its optimal condition and character.

3) Viability. The long-term prospects for the continued existence of the occurrence.

4) Defensibility. The extent to which the occurrence can be protected from extrinsic human factors that might otherwise degrade or destroy it.

APPENDIX B

PLANT SPECIES LIST FOR THE ALPINE AREAS ON SADDLEBACK MOUNTAIN AND THE HORN

The following list includes all species found in the alpine areas of Saddleback Mountain, the "saddle," and The Horn that have been documented by herbarium specimens (University of Maine Herbarium) or by direct observation since 1978.

Abies balsamea
Betula cordifolia
Carex brunnescens
Carex bigelowii
Chamaedaphne calyculata
Cornus canadensis
Diapensia lapponica
Empetrum eamesii var. *atropurpureum*
Empetrum nigrum
Eriophorum vaginatum
Geocaulon lividum
Hierochloe alpina
Juncus trifidus
Kalmia polifolia
Larix laricina
Lycopodium annotinum
Picea mariana
Rhododendron groenlandicum
Rubus chamaemorus
Sibbaldiopsis tridentata
Trichophorum cespitosum
Vaccinium angustifolium
Vaccinium boreale
Vaccinium oxycoccus
Vaccinium uliginosum
Vaccinium vitis-idaea
Viburnum edule

APPENDIX C

PREPARERS, REVIEWERS, AND CONSULTANTS

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APPENDIX D

METHODOLOGY USED FOR ASSESSING MARKET RESPONSE AND SOCIOECONOMIC IMPACTS

Introduction: The socioeconomic analysis for this environmental assessment provides an analysis of social and economic impacts that could occur in Franklin County, Maine, in response to four alternatives for protecting the Appalachian National Scenic Trail across Saddleback Mountain and the no-action alternative. The socioeconomic analysis uses IMPLAN, an industry standard "input-output" socioeconomic modeling program. It is important to note that the socioeconomic analysis constitutes neither an appraisal of Saddleback Ski Area's property nor a financial analysis of the potential outcomes of expansion activities to the owner of the ski area.

As stated in Chapter 4 of the environmental assessment, protecting the Appalachian Trail through the transfer of land to National Park Service ownership under the alternatives would have little or no direct measurable socioeconomic impact by itself. The only clearly measurable direct impact associated with protection of the Trail itself would be a small decreases in property tax bases, which would be largely offset by payments under the Payments-in-Lieu-of-Taxes (PILT) program.

However, each of the alternatives *could* have indirect, secondary impacts. Saddleback Ski Area would be able to engage in a significant level of expansion activity, *if* it chooses to do so, under each of the alternatives for protecting the Appalachian Trail. This expansion activity could have a variety of impacts, from impacts to the scenic and natural resources of Saddleback Mountain and the Appalachian Trail to impacts to the social environment and economic base of Franklin County.

Saddleback Ski Area has pointedly declined to provide information regarding any plans for future expansion beyond the facilities that have been approved by the Maine Land Use Regulation Commission. Consequently, the National Park Service asked a professional ski area design firm, Sno.engineering, Inc., to design a "logical development scenario" for each alternative so that the impacts associated with ski area development could be evaluated. In addition, the National Park Service asked Sno.engineering to identify the social and economic consequences associated with ski area development that could occur under each alternative *if* Saddleback Ski Area expanded to full build-out potential under each alternative.

If ski area expansion does occur, it would be a secondary outcome tangentially related to the direct actions described in the alternatives, and would be dependent upon actions taken by the owner of Saddleback Ski Area and agencies with regulatory land-use jurisdiction in addition to the National Park Service's action to protect the Appalachian Trail. *Thus, the "logical development scenarios" and their consequent impacts are not direct impacts of the alternatives.* Rather, they are potential, secondary responses to the alternatives and other factors.

The National Park Service asked Sno.engineering, Inc., to address the following issues in their analysis of the social and economic consequences of the alternatives:

- Would the additional ski area expansion identified in the "logical development scenario" for Saddleback Ski Area result in increased numbers of skier days? Is there a demand for new ski area opportunities in this area?
- What factors should be taken into account in conducting an analysis of the potential market response to expansion at the Saddleback Ski Area?
- Project the market reaction – in terms of skier-visits – in response to each of the ski area expansion options made possible by the alternatives.
- Project the socioeconomic impacts of the alternatives, primarily in terms of the additional business and economic activity that could be generated by expanded operations at Saddleback:
  - Would new jobs be created? What kind, and at what income level?
  - Would housing starts increase? Where would this occur?
  - Would additional community services be required and how much would they cost?
  - Would the tax base of the affected communities and the county increase? By how much?

Sno.engineering made a number of assumptions regarding the ski area expansion scenarios in order to make reasonable estimates regarding their market potential. These assumptions included:

- Public parking would be expanded commensurate with ski area capacity.
- Skier services would be expanded commensurate with ski area capacity. These include, but are not limited to: lodge seating, food service, ski rental shop and ski school services.
- Snowmaking coverage would be expanded to approximately 90 percent of total skiable terrain under each of the alternatives. This is the industry standard in the Northeast Region and it is highly unlikely that any ski facility expansion would be undertaken without including snowmaking.
- Saddleback Ski Area's currently approved Master Plan includes approval for construction of 300 townhouses and 75 one and two bedroom units. It was assumed that this construction and the resultant additional bed base would occur.
- All of the alternatives assume the upgrade of Saddleback Ski Area's existing lifts. It is unrealistic to assume that any expansion would occur without upgrade of these lifts, which should be replaced with modern, high capacity equipment before continuing with ski facility expansion in other areas on Saddleback Mountain.
- It was assumed that all of the ski area expansion scenarios would take place over a 10-year period, consisting of five two-year phases commencing in the year 2000.
- Saddleback Ski Area's marketing efforts would be expected to increase commensurate with the investment in the ski facility.

Modern mountain resort expansion typically involves a number of non-ski elements. Because Saddleback Ski Area declined to disclose any information regarding future plans for non-ski elements, they were not included in the analyses of market response or socioeconomic impact. Sno.engineering's analysis indicated that the absence of these facilities and amenities would have a serious negative impact on market performance. However, it is unlikely that any moun-

tain resort would undertake the ski facility improvements without undertaking some or all of the following additional resort-based improvements:

- *Bed Base* – Saddleback Ski Area indicated that there are now 400 beds in housing at the ski resort. The 1989 Master Plan includes units that could increase the bed total to approximately 2,500. Competitive destination mountain resorts typically seek a ratio of at least one bed per skier-at-one-time. Even if the additional units are built, Saddleback Ski Area would fall well under this ratio for all of the alternatives.

- *Alternative Recreational Facilities* – Competitive mountain resorts seek to provide a broad range of recreational facilities. These typically include indoor and outdoor activities for all seasons and include a variety of activities for non-skiers. Destination resort visitors expect these facilities, many of which do not presently exist at Saddleback Ski Area.

- *Cultural and Entertainment Facilities* – Destination resort visitors expect a variety of cultural and entertainment based activities, which do not presently exist at Saddleback Ski Area.

- *Commercial Activities* – Destination resort visitors expect to be able to shop and to have the option of eating at a number of restaurants. A wide variety is not presently available.

Finally, there are three basic realities that have been factored into the analysis in projecting the potential market response. These include:

- *Access to Markets* – Experience with ski resorts throughout North America indicates that access to markets is essential both for creating and maintaining skier-visits. In the ski industry, access is typically defined by: (1) the presence of a large population within easy driving distance of the ski area, and/or (2) easy access to a major or regional airport providing connections to major metropolitan populations. Saddleback Ski Area is not within an easy driving distance of major northeastern metropolitan areas *and* does not have easy access to commercial airline service. Comparatively poor access to markets reduces any ski area's ultimate visitation potential.

- *Presence of Support Infrastructure* – Major mountain resorts must take advantage of, or create, a network of support infrastructure. Support infrastructure includes a number of elements, including: (1) transportation – highways, air travel links, shuttle services and other features of an efficient 'people delivery' systems; (2) utilities – on-site support services including power, water, sewer disposal, trash disposal, etc. and; (3) community services – services typically provided by municipalities or counties, including police, fire, and emergency services. The Rangeley area is rural and, while an infrastructure system is in place, it does not currently have the capacity to handle the demands that would be created by a mountain resort hosting several hundred thousands of visits annually. This support infrastructure would have to be substantially expanded if visitation at Saddleback Ski Area were to increase substantially.

- *Competition from Established Ski Resorts* – A number of regional resorts have already captured a share of the available ski market. An expanded Saddleback Ski Area facility would have to compete with these facilities for market share.

Market Based Projections: Projections of market response to the expansion scenarios were developed in terms of changes in skier-visits during a ten-year phase-in period. The following principal factors affect these projections:

- A positive market response would be expected in response to the expansion of skiable terrain and increases in lift capacity. Skier-visits would increase, although not on a one-to-one ratio.
- Saddleback Ski Area's location is a competitive disadvantage and is most comparable, in the marketplace, to Sugarloaf Ski Area's location.
- Expansion and capacity increases would be far more effective if they were accompanied by the development of additional resort facilities and a local bed base. Saddleback Ski Area has not provided any information regarding their expansion plans, nor is it possible to assess what options the ski area may choose at some point in the future. As a result, the market response to facility capacity increases at Saddleback Ski Area would not be expected to be as strong as that experienced at other regional ski areas.
- Saddleback Ski Area currently has a 'low profile' in the destination resort market. This could be expected to increase gradually as skiing capacity increases. However, this low profile would result in a lower, initial market response.
- The market response to each alternative would be expected to vary dependent on the overall size and variety of the facility and the distribution of skiable terrain with respect to the ideal for a modern resort.

In all instances, skier-visits are expected to increase as the capacity of the ski facility increases. This is the basic factor guiding the projections. However, this is not a direct relationship. A doubling of capacity does not necessarily result in a doubling of skier-visits. Sno.engineering's experience with the North American ski industry indicates that in some instances, ski areas have more than doubled skier-visits in response to a doubling in capacity, while in other instances the ratio of increase has been less than one-to-one. Based on the combination of factors summarized above, it is expected that the skier-visit response to increases in capacity at Saddleback Ski Area will be less than the industry and regional norms. The factors that were considered included, but were not necessarily limited to: (1) Saddleback's remote location and poor access to markets; (2) Saddleback Ski Area's limited resort development activity and the absence of any planned full-resort expansion; (3) the lack of bed-based development, and; (4) the lack of currently available local support infrastructure to support a major ski resort.

It is important to note that while the skier-visit projections indicate that there could be significant increases in skier-visits at an expanded Saddleback ski area, the skier-visit totals are well below the maximum potential of a ski area of the sizes envisioned in the expansion scenarios. Ski area 'utilization' is a commonly used measurement in the ski industry that refers to the ratio of number of skier-visits in one season to the total capacity of the ski area (determined by multiplying the capacity in SAOT by the number of days in the ski season). As an illustration, with a capacity of 14,500 SAOT and an assumption of a 120-day ski season, the "logical development scenario" projected under Alternative #3 would have a total capacity of 1,740,000 skiers. Under the

assumption listed above, the ski area would experience a total of 230,000 skier-visits, and its "utilization rate" would be 13.2 percent. This is quite low by industry standards and suggests that the business would have a poor economic performance.

The socioeconomic analysis assumed that the construction of each expansion scenario would take place over a 10-year period, commencing in the year 2000. Potential construction costs were broken down into two major categories:

On-Mountain – consisting of ski lift and trail construction. For the purposes of estimating the economic impact of the alternatives in the study area (Franklin County), lift construction costs were removed from the calculations. Lift purchases and the great majority of the lift construction activity would flow to firms outside of the county.

Base Area – consisting of base area buildings and facilities oriented toward skier services.

Direct construction related impacts were estimated as follows:

- Construction dollars expended on a year-by-year basis.
- Estimate of total Franklin County employment generated by the construction activity.
- Estimate of the total Franklin County personal income generated by the construction activity.

Ski Area Operations and Visitation: All of the alternatives for protecting the Appalachian Trail leave a land base that would allow for an expanded ski area operation which, in turn, could lead to increased visitation. This increased visitation would result in additional dollars expended at the ski area and at a number of Franklin County businesses outside of the ski area. Ski area expenditures include tickets, lessons, food & beverage, lodging and purchases at the ski shop. Expenditures outside the ski area include items like food & beverage, lodging, shopping, transportation, liquor purchases, entertainment, and other miscellaneous expenditures. The expanded ski area and the expenditures inside and outside of the resort would result in additional employment and personal income in Franklin County. Relevant assumptions regarding these impacts follow:

- Ski area employment was estimated *both* in terms of typical employment levels for ski operations of a size similar to those outlined under the expansion scenarios *and* in terms of employment generated by expenditures inside the resort. It should be noted that these estimates vary for all of the alternatives. The nature of typical employment opportunities in the ski industry is outlined below.

  Full-time, year-round employment at smaller ski areas is typically limited to senior management, administrative staff, and operations management staff. These positions are normally salaried jobs typically ranging from $20,000 to $30,000 annually for administrative staff, $30,000 to $45,000 for key department managers, and $45,000 to $60,000 for general managers. A small number of hourly jobs for individuals with specialized mechanical skills may also last year-round, typically paying between $7 and $12 per hour. Approximately 6 to 10 percent of the peak number of winter employees will be full-time, year-round. Full-time, year-round employees, particularly those on salary, often average 50 to 60 hours weekly in the ski season.

Full-time, seasonal employment at smaller ski areas is typically provided for supervisors and a limited number of service and support employees. The department supervisors typically earn a weekly salary for the season, generally in the range of $300 to $600 depending on experience and responsibilities. The majority of employees, those in the service and support positions, typically earn hourly wages ranging from $5.50 to $12, with most earning at the lower end of the range. Approximately 40 to 50 percent of the peak number of winter employees will be in the full-time seasonal category. Full-time seasonal employees typically average 40 to 50 hours per week in season, dependent largely on business volumes.

Part-time seasonal employees at smaller ski resorts generally work exclusively in services and support positions. They are paid hourly, or sometimes on a per-lesson basis for ski school employees. The hourly pay rate is typically at minimum wage or slightly above, while a small number of employees with specialized training, such as ski instruction certifications, may earn $8 to $12 an hour. Approximately 45 percent of the peak number of winter employees typically will be in the part-time seasonal category. Weekly hours for part-time seasonals can range from a single two-hour ski lesson to 35 hours per week of various tasks, dependent almost entirely on business volume on any given day. Over the course of a season, an average of roughly 20 hours per week is typical.

At larger resorts, particularly those with business operations in more than just the winter season, additional full-time, year-round opportunities exist on the supervisory and lower levels. The pay range is virtually the same as that described above for smaller areas, with the exception of a higher rate for upper management, often in the low six-figure range. Generally, 10 to 15 percent of the jobs at these areas are full-time, year-round. In-season time commitments are similar to those at smaller resorts, with a slightly less demanding schedule in the other seasons.

Seasonal positions at larger resorts, both full-time and part-time, yield pay scales and work weeks similar to those described above. The major difference is the longer length of the ski season, and the potential to work at the resort in other seasons. Smaller resorts generally operate for 16 to 20 weeks each year. Larger resorts often operate for 20 to 24 weeks for skiing, and another 16 to 20 weeks in summer/fall.

- In-resort expenditures were estimated based on typical per capita expenditures at Northeastern ski areas adjusted by the size (capacity) of each alternative.
- Expenditures outside of the resort were estimated based on surveyed, per capita Maine skier expenditures in the recent report Economic Impact of the Ski Industry in Maine. These per capita figures were adjusted in three ways: (1) a Consumer Price Index (CPI) adjustment to account for inflation since the survey was completed (1996/97); (2) an adjustment to account for skier expenditures that are likely to take place outside of Franklin County (20 percent of all expenditures) and; (3) several surveyed expenditures (such as highway tolls) would not take place in Franklin County.
- The adjusted per capita expenditures were multiplied by the skier visit projections for each expansion scenario to estimate total annual spending in the tenth year of the phase-in. The annual expenditures would be expected to continue at this level in subsequent years.

- Non-ski area employment estimates were developed using an economic modeling process.

Ski area operations and visitation-related impacts were estimated as follows:

- Estimated ski area employment during each year of the phase-in period based on industry standards. Employment is reported in terms of full-time-equivalents (FTEs).
- Summary analysis of the types of ski area jobs to be created.
- Estimates of total Franklin County expenditures generated by the expansion scenarios both inside and outside the resort.
- Estimates of total Franklin County employment generated by the expansion scenarios.
- Estimates of total Franklin County personal income generated by the expansion scenarios.

Indirect and Induced Economic Impacts: The expenditures and employment created by ski area expansion would, in turn, create additional expenditures and employment in Franklin County. An input-output model using a detailed Franklin County database was used to estimated these 'indirect' and 'induced' impacts. The direct impacts discussed above measure the expenditures and employment created by increased activity at Saddleback and visitation to Franklin County. In contrast, indirect impacts are the results of increased spending by the ski area and other businesses that receive visitor spending. Induced impacts reflect changes in spending from households as income/population increases or decreases due to the changes in economic activity.

Impacts were estimated at the completion of the ten-year phase-in period as follows:

- Indirect and induced Franklin County employment impacts were summarized for each expansion scenario. All estimates are in term of full-time equivalents (FTEs).
- Indirect and induced Franklin County personal income impacts were summarized for each expansion scenario.

Other Indirect Impacts: Other indirect impacts were estimated as follows:

- Increased employment would draw workers and their households to the Franklin County area. Estimates of the number this 'migration' impact, and its resultant impact on county population and housing are presented for each expansion scenario. Experience during the past 15 years in the Northeast Region indicates that over-all, approximately 15 percent of new jobs that have been created are taken by persons who move to the area for the purpose of taking the job.

- In this instance, the great majority of the resort-based jobs would be seasonal in nature and unlikely to induce workers to move to the area. As such, a migration rate of 12 percent has been assumed. The population estimate has been calculated by assuming that households migrating to the area will have an average of 2.5 persons. Finally, it has been assumed that the existing housing stock will handle the housing needs of 25 percent of the incoming households and that the remaining 75 percent will create demands for new housing units. All of these impacts will be gradual – occurring over the length of the ten-year phase-in period.

APPENDIX E

METHODOLOGY USED IN PREPARING COMPUTER AND VISUAL SIMULATIONS

Computer simulations and photo-simulations of the visual impacts of potential ski area development on Saddleback Mountain were developed using state-of-the-art photo-simulation and computer graphic technology.

Computer simulations: Computer simulations of ski area expansion scenarios were initially prepared using Visual F/X (VFX), a software program developed by Resource Analysis Systems, Fort Collins, Colorado. The primary products of VFX are three-dimensional perspective scenes depicting the landscape as it would be seen through a 35mm camera with a 50mm lens. Using VFX software and digital terrain data for the area around Saddleback Mountain, terrain models were created for perspectives from five identified viewpoints. Vegetation was simulated by establishing height and density data for the vegetation types for each natural community and selecting representative tree or shrub species from a program menu.

The following steps were taken to create the actual computer simulations:

1. Contour map data from the U.S. Geologic Survey and other sources was imported into the VFX software program to create a digital elevation database.

2. Computer terrain models were created from the database for five viewpoints on Saddleback Mountain. The computer terrain models then were aligned to match the landforms and views for each photograph.

3. Geographic information system (GIS) data depicting potential ski area expansion, vegetation, and other features were converted to a Moss Export Format, which is required for utilization of VFX.

4. Vegetation maps were created for each alternative by digitizing vegetation and clearings formed by ski trails and ski lifts for each alternative. Vegetation species and density data were assigned based on mapping of natural communities vegetation.

5. Scenes illustrating proposed ski area development for each alternative were then created by combining the appropriate terrain models and vegetation maps for each viewpoint and alternative.

6. Computerized scale models of ski lift terminals and towers were developed and inserted into the illustrations for reference in completing the photosimulations.

Photosimulations: The photosimulations were based upon existing photographs and slides taken from different locations on the Appalachian Trail on Saddleback Mountain. The photographs and slides were scanned and imported into Adobe Photoshop, and the digital terrain models described

above were imported as a separate layer in the same program. The model was then adjust to register with the computer-generated images of the landscape in each photograph.

The primary visible changes to the landscape that were modeled included the ski lifts, lift terminal stations, support towers, and cables, and the clearing required for ski trails and lifts. The following techniques and parameters were used in creating photosimulations of these features:

- The width and location of the clearing for ski lifts and trails were based on the digital terrain models generated for the four alternatives.

- Photographs of Saddleback Ski Area and other ski areas in Maine were used to accurately reflect the proper color and texture of the ski trails and lift lines in the photosimulations. Ground surfaces for the ski trails and lift lines are primarily grasses and other low-growing vegetation, with occasional exposed bedrock or ledges.

- The simulations of the upper lift terminals and tower structures were modeled on current industry standard equipment (manufactured by Doppelmayr) used at several other ski areas. Images were scanned from photos and then colorized with a brown and tan color scheme.

- Adjustments were made to the photosimulations to simulate the atmospheric effects, perspective, and lighting conditions of the original photographs.

The final result is a set of 20 photo-realistic visual simulations and two computer simulations that depict the visual effects of four different alternatives for potential expansion of Saddleback Ski Area, as seen from five different viewpoints on the Appalachian National Scenic Trail.